



Unit/Dept. APD/Research & Development	Document type Assembly Instruction	Date 2006-05-19
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This document is found at www.flexlink.com: Technical library/Functions/Automatic guiding system.



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1. AGS-system layout

The AGS-system contains the following parts:

1. Control box;
2. Guide units;
3. Guide unit cables;
4. Junction box;
5. Zone supply cables.

The points 4 and 5 are used when the number of Guide units are higher than the Control box itself can control.

The default distance between Guide units is 1 meter. This may be changed depending on application.

See picture next page.

For more information see document "Controls overview".

1.1 Integrator responsibility

Some parts of installation is application depending and part of the integrator's responsibility:

1. Box mounting frames;
2. Wire ways;
3. Zone supply conductors (see chapter "4. Zone supply")



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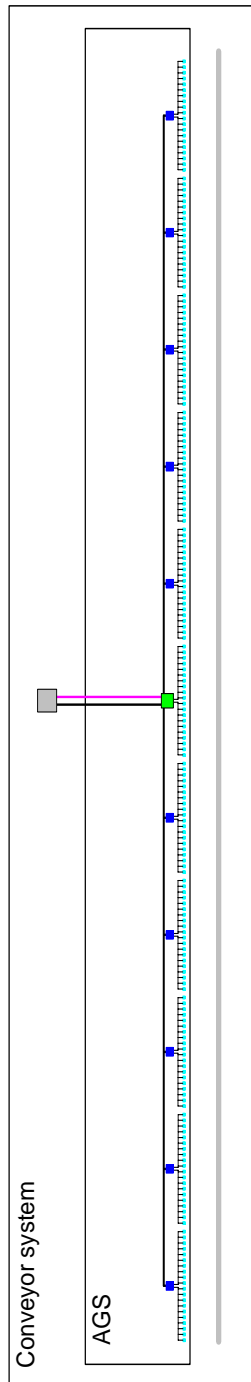
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Data

- 1 Control box
- Max. 5 Junction boxes in both directions
- Max. 10 Guide units in both directions for each box

Legend

- Conveyor system's control cabinet
- Control box
- Junction box
- Guide unit
- Conveyor
- Power cable
- Communication cable

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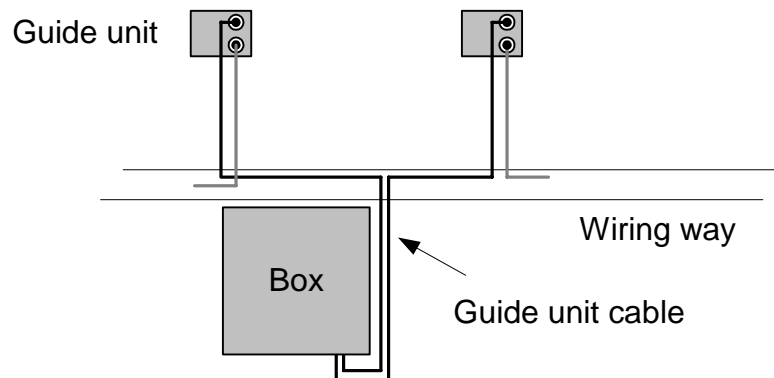
2. Placing components

General information:

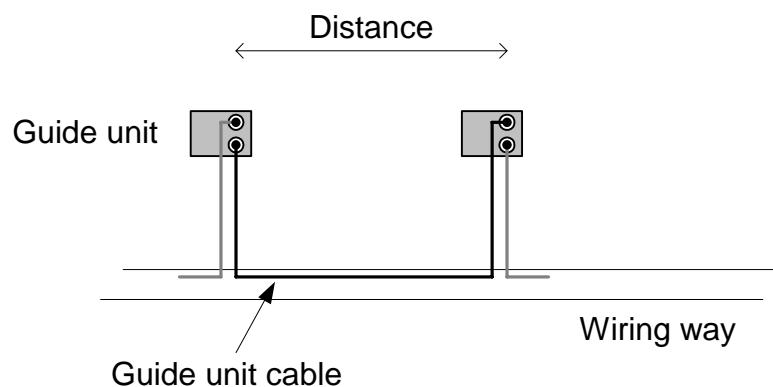
- The cable between Guide units is a factory-made cable with fixed length (2 or 3 m) connectors in both ends which affects the placing of components.
- Maximum 5 Junction boxes can be connected in each direction from the Control box.
- Maximum 10 or 6 (depending on cable length) Guide units can be connected in each direction from Control box/Junction box.

Instructions:

- Adjust the distance between the Control box or Junction box and the Guide unit so that the Guide unit cable reaches between the Control box or Junction box and the Guide unit.



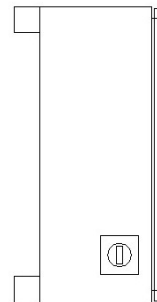
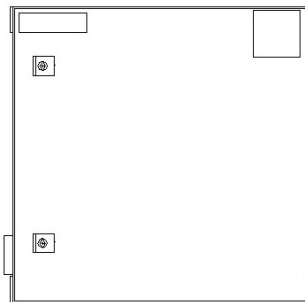
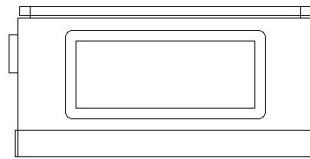
- Place the Guide units so that the cable reaches between the Guide units.





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- The Control box and the Junction box are equipped with two horizontal XCBL 44 beams with T-slots attached to the backside. This makes it easy to mount the Control box and the Junction box to other FlexLink structural beams.



2.1 Using non-standard Guide unit cables

The standard length of Guide unit cable is 2 m for basic version and 3 m for heavy version.

If for any reason longer cables are required, the total cable length from the box to the last Guide unit of that group is not allowed to exceed 20 meters.

Connectors for customized cable (Manufacturer Wieland):

- Female 96.031.4053.1 (screw connection)
- Male 96.032.4053.1 (screw connection)

For more information – www.gesis.com.

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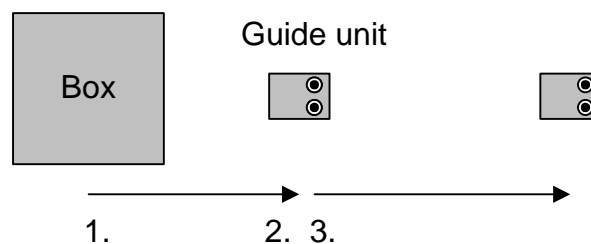
3. Guide unit supply

The Guide unit cable is a factory-made cable with fixed length and connectors in both ends.

The Control box, Junction box and the Guide unit are equipped with same type of connectors.

WARNING! Disconnect electrical power by switching off the main switch of the Control box before any electrical installation is started. Lock the switch with a padlock until the installation is finished.

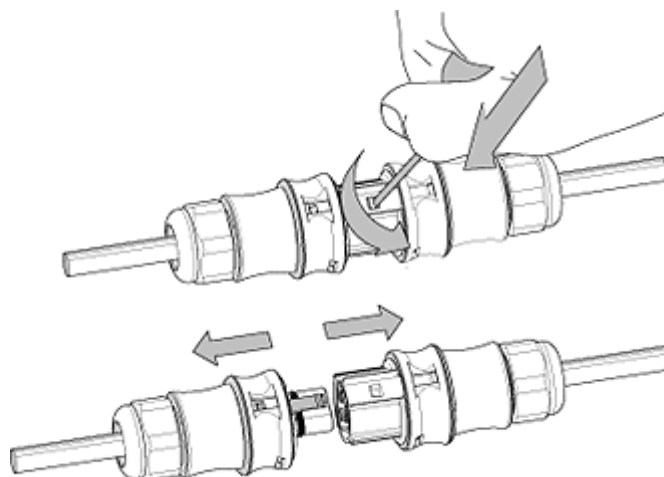
- Start by plugging the Guide unit cable into the Control box or Junction box, thereafter into the Guide unit.
- Proceed by connecting the rest of Guide units controlled by the same Control or Junction box.



3.1 Connectors

When connecting two connectors the catch must say "click". The Guide units otherwise risk to malfunction.

For disconnection see picture below.





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4. Zone supply

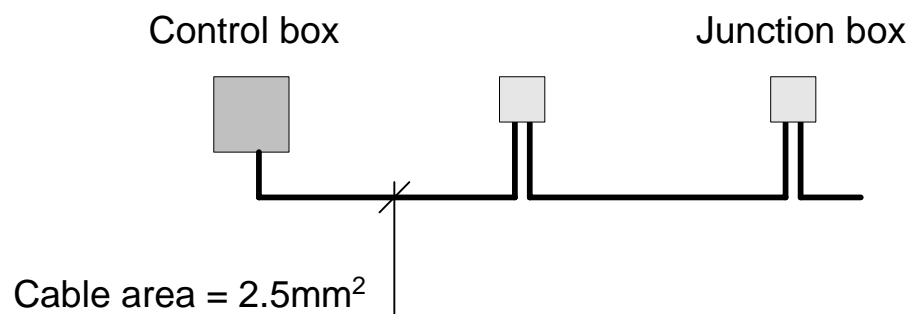
Up to five Junction boxes can be connected in both directions from a Control box.

The Zone supply conductor runs from the Control box and through the Junction boxes. The conductor cable area must be 2.5mm^2 . The integrator is responsible for the choice of Zone supply conductor and wiring way.

Note: Preferably U.I. Lapp, Öflex 110, 5G2.5, 1119 405, is selected for european installations.

WARNING! Disconnect electrical power by switching off the main switch of the Control box before any electrical installation is started. Lock the switch with a padlock until the installation is finished.

- Run the conductor from the Control box and connect it to nearest Junction box.
- Continue to run conductors between the rest of Junction boxes.





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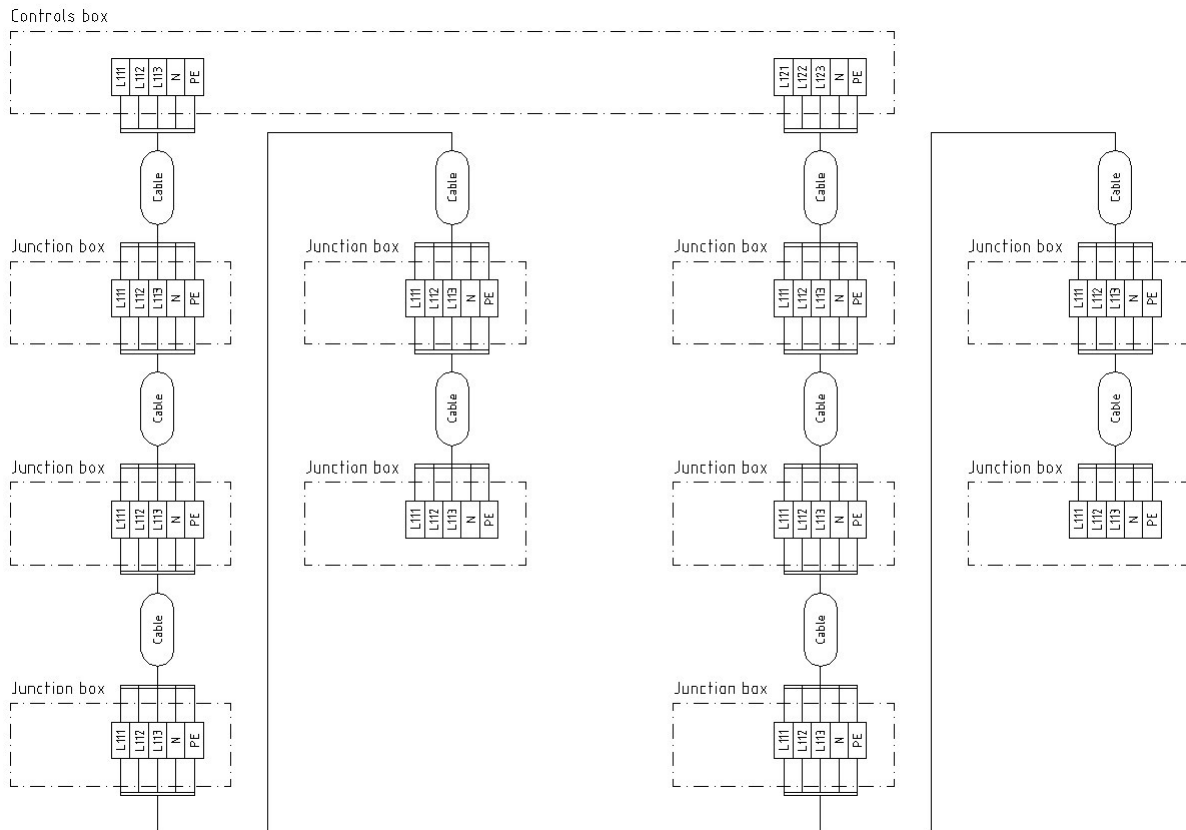
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European installation





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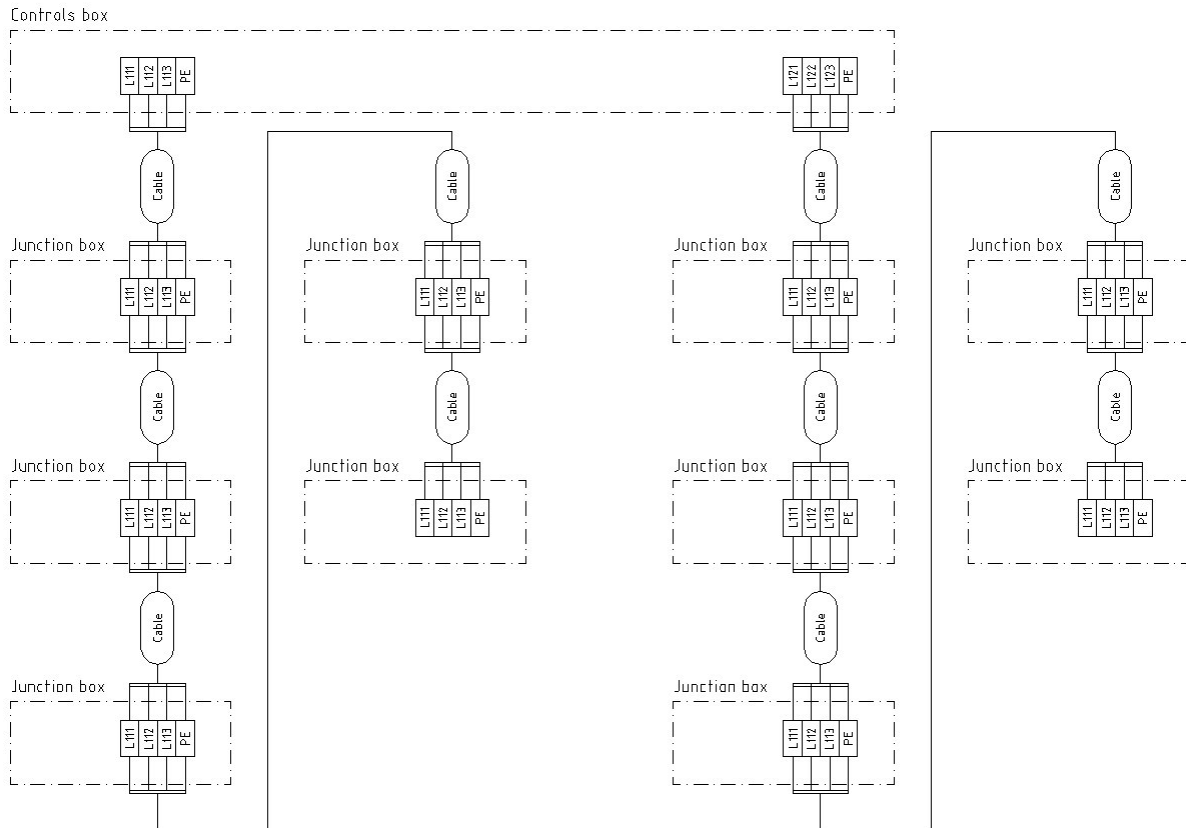
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US installation





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5. Safety information

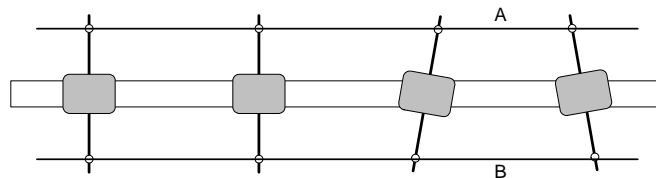
It is important to secure that products on the conveyor can not fall down on personal and cause personal injury. Fall protection may need to be added below the conveyor. This is specifically important where conveyors are running overhead a gangway. There is a risk that the customer runs the system adjusted for the wrong product, this might increase the risk of falling products. It is the integrators responsibility to install protections.

6. Installing the guide rail to the Guide units

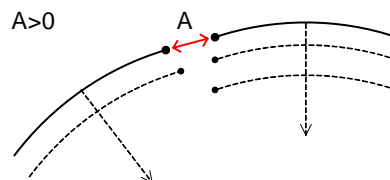
Attach all Guide units to the conveyor. It is very important that the Guide units are parallel to each other (see picture below). A and B must be equal.

Check that all Guide units are in outer position, this is the way they are delivered. Install the guide rails adjusted for the widest product.

When the power supply is installed, run the system in and out and check that everything runs smooth. Built in tensions can stop the system.



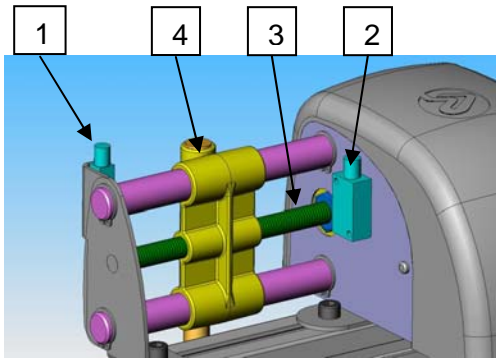
If a curve is made of segments placed at the same level it is important that the ends of the segments never comes in contact with each other (see picture below). Check the whole stroke of the guide unit!





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7. Feedback functionality – Track width setting



7.1 System overview

The home position sensor (1) and the pulse sensor (2) shall be connected to the field bus interface in the Control box with a cable (not included in delivery). The cable must have M8 3-pin connector towards the sensors.

The pulse sensor (2) is a magnetic sensor that counts pulses while the screw (3) is rotating. The home position sensor (1) is an inductive sensor that detects when the sliding element (4) is in end position.

7.2 Synchronization

If, by any reason the Guide units in a line are in different positions the line has to be synchronized. When the command “synchronize” is chosen the unit starts to move out. After reaching the home position sensor (1) the unit continues to move another 20 seconds*. If needed repeat this sequence until all Guide units are in outer position.

**The Guide unit can run against mechanical stop. This will make a humming sound but will not damage the motor inside.*

For controls information see document "Software user guide".

Specification



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8. Fault handling

No.	Error description	Check	Possible reasons	Action
1	Guide unit not moving	a. Check automatic fuses b. Check relay c. Total cable length d. Number of Guide units connected e. Are the guide rails attached to the Guide units without any stress?	Cable length too long. Conveyor not horizontal. Guide units not parallel to each other.	One relay should pull when running. The total cable length from box through Guide units is not allowed to exceed 20 meters. The total number of Guide units should not exceed 10 in each direction. Check conveyor with water level. Check Guide units with scale and composing stick.
2	Guide unit moving the wrong direction	a. Connectors	Loose Guide unit connector	Secure that connectors are connected correctly.